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ABSTRACT

This publication contains six presentations on using microcomputers in special education, submitted by special education teachers at informal information sharing sessions. The first is a lesson plan involving pre-computer activities that prepare preschool developmentally delayed children for using a computer keyboard. Finger isolation and directionality are taught through the use of modeling clay, toy cars, tracing, and games such as Simon Says. The second presentation gives guidelines for forming groups of computer-using special educators who want to exchange ideas. Following that, two lesson plans provide drill and practice in reinforcing basic math skills for elementary resource room students. The software programs used are "Mastering Math System" and "Milliken Math Sequences," both operating on Apple IIe computers. Another lesson plan explains how a menu-driven program called "Secret Filer" is used by emotionally disabled elementary school students to create databases of information about stories they have read. The final lesson describes use of the "Adaptive Firmward Card" to customize computer input methods for physically disabled students, aged 8-11 in ability. For each lesson, the following types of information are given: target audience, hardware and software needed, project description including objectives, lesson description, scheduling information, and teacher preparation activities. (JDD)

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THE Northwest Regional Educational Laboratory

TECHNOLOGY PROGRAM

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IDEAS FOR INTEGRATING THE MICROCOMPUTER WITH SPECIAL EDUCATION

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May 1987

Edited
by
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IDEAS FOR INTEGRATING THE MICROCOMPUTER WITH SPECIAL EDUCATION

May 1987

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Technology Program
Northwest Regional Educational Laboratory

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Introduction

Much of the innovation in the use of microcomputers in education has come from the classroom teachers who are using the computers with kids. Unfortunately, much of this innovation stays in the classroom. The teachers do not often have the time or the opportunity to teach other teachers how to do the things that they do so well.

Some of this isolation of good ideas is solved through regional and local conferences where teachers are encouraged to make formal presentations during concurrent sessions. Unfortunately, this solution is inadequate for those teachers who are successful with what they do in the classroom but do not feel that what they are doing warrants an entire session at a conference. They are willing to share ideas but are unwilling to do so in such a formal atmosphere. In fact, teachers often report that they get more out of informal talks in the hallways between conference sessions than they do from the formal sessions. It is in those informal sessions that they can compare notes and share tips.

With this situation in mind, the Technology Program of the Northwest Regional Educational Laboratory offered an environment where computer-using educators could share ideas among themselves. Teachers were invited to report to each other on what they were doing which they found useful within a particular subject area. Each teacher was asked to present an idea informally and to chat with the other teachers there about which software works, how students respond, what is the best value, etc. There was no strict agenda and an abundance of informal time was planned. The teachers were given access to the Laboratory's Technology Center where they could use the computers to try the software described or to sample from the Center library of over 2,000 educational software titles.
In November of 1986 and again in April of 1987, forums were scheduled for special education teachers to talk about the things that they were doing which worked. The only restriction on presentations was that the topic should be about teaching students rather than managing instruction (writing IEPs, grading papers, etc.) The participants discussed a variety of projects and exchanged some valuable ideas. The teachers were from virtually all special education settings teaching students with virtually all disabilities and degrees of severity.

Within this document are the lesson plans which the teachers brought to the sessions. In most cases there are also some supporting materials. I have tried to complete the descriptions by reporting some of the exchanges which took place around each idea. The forums will be a continuing activity of the Laboratory. If you have an idea to share, please watch for an announcement.

Pre-Computer Activities

When working with severely disabled students, definitions of terms sometimes need to be altered. In the following lesson plan, the concept "computer literacy" is stretched to include those skill which are needed to even begin with a computer. Kit Bennett and Miki Phillipi are occupational therapists who work with pre-schoolers with a developmental motor age of one to two and a half years. While they call their activities "pre-computer," their work is with modeling clay, toy cars and finger paints. The lessons teach finger isolation and directionality in preparation for interacting with a computer keyboard. Before learning to "hunt and peck" on a keyboard, a child must know where to hunt and how to peck.

Kit uses materials which are likely to be around the pre-school classroom for her lessons. Most of them, of course, are games to play with the child. The lesson plan is on the following pages.

What Works for You?
Using Computers in the Classroom

SUBMITTED BY

Name: Kit Bennett, OTR/Niki Phillipi, COTA

School Address: Beaverton Schools, P.O. Box 200, Beaverton, OR 97075

Phone: 503/649-0348 **Best time to call:** M,W,F 1:30-4:00

TARGET AUDIENCE

Grade: Preschool **Ability level:** Developmental level for fine motor area. 1-2½ years.

Comments: Also appropriate for use with older children with the same developmental age.

HARDWARE

Number: **Type:** **Peripherals:**

Arrangement:

SOFTWARE

Title(s): **Publisher(s)**

Number of copies:

PROJECT DESCRIPTION

Title or brief description: Pre-computer activities

Instructional Purpose: To prepare young, developmentally delayed children for using computer keyboard.

Objectives:

1. Student will be able to isolate one finger on each hand to push keys.
2. Student will be able to identify the following directional concepts: up, down, on, under, in, out, across, go, stop.
3. Student will demonstrate knowledge of basic operations keys.

DESCRIPTION OF THE LESSON

Pre-activities:

1. Provide appropriately sized tables and chairs.
2. Fine motor activities to include poking with fingers, pulling strings, picking up toys with fine pincer grasp.
3. Games such as Simon Says, obstacle courses, tracing, and map games.

Computer activities:

4. Matching games with basic operations for keys on the computer.

Follow-up activities:

MANAGEMENT

Total Time: 20-30 min. **Schedule:**

Things to watch out for: Encourage index finger isolation and fine pincer grasp for fine motor tasks. A comfortable sitting posture will make these activities more successful.

TEACHER PREPARATION

List of instructional materials:

1. Play dough.
2. Bubbles.
3. Small objects to manipulate such as buttons, beads, cubes, puzzles, pegs.
4. Tiny clothespins.
5. Chunks of foam, plastic tubes or coffee can with slits in plastic cover.

Teacher "To Do" list:

6. Old maps or simplified maps.
7. Tracing worksheets.
8. Large motor toys to arrange for obstacle course.

Pre-computer Activities

1. Finger Isolation

   A. Pressing holes in playdough with finger.
   B. Popping bubbles with finger.
   C. Pulling strings out (i.e., talking phones, dolls).
   D. Picking up small items using pincer.
   E. Pegs in and out of holes.
   F. Poking items through holes (i.e., foam through slits in coffee can lid.
   G. Finger painting.
   H. Beads on string.
   I. Tearing small pieces of paper, styrofoam, etc.
   J. Talking/singing with clothespins (small ones are the best).

2. Directionality

   A. Simon Says
   B. Obstacle courses
   C. Tracing
   D. Following maps (can be made with pictures or objects)
   E. Following roadsigns with cars
   F. Follow the Leader
   G. Playing games with small toys and making them "fly" up, down, left, right, etc.

   (With the above, point out and talk about up, down, fast, slow, on, under, in, out, across, go, stop, etc.)

3. Signs Used

A. ↑	D. ←	G.	Apple
B. ↓	E. On	H.	Space
C. →	F. Off	I.	Return

Forming Technology Users Groups

Sometimes the best way to get help to students is to get help to their teachers. The Portland School District has provided this service through a computer coordinator just for special education. This coordinator, Rosemary Brown, attended the forum to tell the other teachers how they might go about setting up groups of computer-using special educators who could exchange ideas on how to teach.

In setting up the users' group, Rosemary did some research on why such groups might fail. She was particularly aware of the problem that she had a wide range of expertise among the teachers she served. She had to make sure that novices were not intimidated and that experts were not bored. How she did this is demonstrated in her memos and her annotations of those memos which are included.

The participants in the forum discussed changes which would be necessary to get a group going in their area. Most agreed that the biggest problem would be in getting enough teachers interested. Small districts would have to combine with other districts in their regions. All agreed that they wished that such a group had existed when they were starting to get involved in computers in special education.

What Works for You?
Using Computers in the Classroom

SUBMITTED BY

Name: Rosemary Brown

School Address: 531 S.E. 14th Ave., Portland, OR 97214

Phone: 503/282-2433 **Best time to call:** 9:00-5:00

TARGET AUDIENCE

Grade: PreK-12 **Ability level:** Teachers, Aides, Speech, O.T.s, P.T.s, Psychs, Social Workers, etc.

Comments:
from: Special Ed, Chapter 1, ESL-Bilingual, etc.

HARDWARE

Number: **Type:** **Peripherals:**

Arrangement:

SOFTWARE

Title(s): **Publisher(s)**

Number of copies:

PROJECT DESCRIPTION

Title or brief description: Form and maintain a technology user's group for those above.

Instructional Purpose: Increase staff knowledge of how to use computers (etc.) for instruction and information management.

Objectives: Something for everyone at each meeting.

DESCRIPTION OF THE LESSON

Pre-activities: Get o.k. from administration(s) and computer coordinator types.

S.C. meeting — Select Steering Committee carefully (knowledgeable, pleasant, effective)

Computer activities:

At first meeting

- Facilitate discussion of training needs.
- Determine group priorities/goals.
- Plan meeting dates for the year.
- Plan first meeting (or set date to do so).
- Set next steering committee meeting.

Follow-up activities:

- Memo to Steering Committee.
- Summarize priorities and goals.
- Remind of meeting and thank.

MANAGEMENT

Total Time: 1 school year **Schedule:** Once/month after schools

Things to watch out for: Bad topics, bad format to topic match, too narrow a focus

TEACHER PREPARATION

List of instructional materials:

Teacher "To Do" list:

Follow-up of 1st Steering Committee meeting.

MEMO

Set first SC meeting early in the year

Date: September 23, 1986

To: SI-SIG Steering Committee

From: Rosemary Brown

Re: Progress to date

At the first steering committee meeting we reviewed some of the accomplishments of last year and did some brain-storming of possible topics for this year's meetings. Here is a bit of what we decided.

We do have a reason to meet separate from the District's Computer Users Group because of the differences in the way that we in Special Instruction use computers with students.

We value the benefits of networking and will include "ice-breaker" activities at each meeting to encourage that.

We value balance and hope to structure each meeting so that there will be something for everyone, no matter how experienced they are at computer use, no matter what the age/ handicap/ special situation of the students they teach.

We've found that different meeting formats work best with different types of material. We'll try to anticipate for each meeting which format will be most useful to the participants.

name tags, food, & hosting awareness

discussion
multiple small demos
/ presentor
combo

Don't scare away new use or bore the more experienced!

SI-SIG meetings are currently scheduled for the following dates. (All meetings will be at 3:45 in CSC room C-121.)

October 29
November 19
January 21
February 18
March 18
April 15

} another chance to put these on their calendars.

The next meeting of the SI-SIG Steering Committee will be:

Tuesday, October 7
3:30
CSC room 210

} a reminder of time set at the meeting

At this meeting we will plan the presentors, publicity needs, logistics, etc of the first (October 29th) SIG meeting.

} Plan for SIG mtg.

For first SI-SIG meeting we will be asking some people to bring software to demonstrate informally. We will set up a number of computers and encourage participants to drift around and see what their peers are using.

} plan for SIG mtg.

The steering committee meeting on the 7th is an important one, please contact me if you will be unable to attend.

→ a useful phrase

See you then!

Rosemary

Memo to administrative office

Date: October 24, 1986

Keep these folks informed

To: Special Education Administrators, Supervisors, and Department Chairpeople

From: Rosemary Brown

Re: Special Instruction Special Interest Group (SI-SIG)

What the group is.

The Special Instruction Special Interest Group (SI-SIG) is an affiliation of teachers and others within Special Instruction who are interested in the use of computers and other new instructional technology. SI-SIG participants include staff from Special Education, ESL/Bilingual and Regional Programs.

In this, our second year of operation, we are planning six after school meetings to explore the use of technology for instruction and for the management of classroom information.

Our first meeting of the year will be:

Centered to stand out →

Wednesday, October 29
3:45 to 5pm
CSC, room C-121

This meeting will involve an informal demonstration of instructional software by teachers who are using that software in support of instruction. (See enclosed flyer for details.) You are invited to attend the SI-SIG meeting to see just a few of the creative things your teachers are doing with computers in their classrooms.

(obvious manipulation)

Future SI-SIG meetings will be held on:

November 19
January 21
February 18 ←
March 18
April 15

Says "See how well organized we are!" & may get on their calendars.

Your support means a lot. Please come if you can.

(and again...)

An agenda lets people know something's happening

****

AGENDA
October 29, 1986

SI-SIG
Special Instruction Special Interest Group

****

SCHEDULE

3:45 Welcome and announcements (+ ice breaker)

4:00 First Round of Presentations

Even presentors can see something new - they're only "on" once.

	PRESENTOR	PRESENTATION
Comp #1	Reba Parker	FrEdWriter
Comp #2	Rick Frank & Judy Alberts	Lode Runner
Comp #3	Carolyn Cochrane	Certificate Maker
Comp #4	-- computer free	for general use --
Comp #5	David Lee	Crossword Magic
Comp #6	Lynn Schmahl	Keyboarding
Comp #7	Jack Simpson	PrintShop
Comp #8	Linda Schmoldt	Talking Riddles

4:30 Second Round of Presentations

Comp #1		
Comp #2	Dave Albertine	Animation Station
Comp #3	Rogene Bork	vocational software
Comp #4	-- computer free	for general use --
Comp #5	Rosemary Brown	using printers
Comp #6		
Comp #7	Diane Evans	Magic Slate
Comp #8	Linda Schmoldt	Handicapped Children's Computer Software Project

SCHEDULE OF FUTURE SI-SIG MEETINGS

November 19

January 21

February 18

March 18

April 15

← Another bid to get scheduled in - this time with the target audience.

(All SI-SIG meetings are scheduled for C-121, 3:45 - 5pm)

2nd memo to administrators

Date: November 14, 1986

To: Special Education Administrators, Supervisors, and Interested Others

From: Rosemary Brown
for the SI-SIG

Re: Special SI-SIG Meetings

The Special Instruction Special Interest Group (SI-SIG) is an affiliation of teachers and others within Special Instruction who are interested in the use of computers and other new instructional technology. SI-SIG participants include staff from Special Education, ESL/Bilingual and Regional Programs.

We have two very special meetings planned for November and December, and I thought that you might be interested in seeing these.

On Wednesday, November 19th, we will see a demonstration of Desk Top Publishing - a wonderful way to produce professional quality newsletters, forms, flyers, signs, overheads, etc in a matter of minutes. We'll learn how to transfer IBM Wordstar documents to a Macintosh computer, design print materials on screen, and use a high quality LaserWriter printer to produce camera ready copy.

working to educate to get support

On Wednesday, December 3rd in a joint meeting with the District's computer user's group there will be a demonstration of the new Apple IIgs - the newest computer from Apple which is designed to appeal to education and the home market. At last - an Apple which uses sound, color, and high quality graphics!

built lots of good will this way

You are welcome to join us at either of these meetings. Both will be held in the Child Service Center, (14th and Stark) in room C-121 at 3:45.

Please call me at 6453 if you have questions.

Sometimes a phone call can help.

agenda for the

****

AGENDA
January 21, 1987

SI-SIG
Special Instruction Special Interest Group

****

SCHEDULE

3:45 Welcome and announcements

NCCE Conference
Computer giveaway
CIEP Project

4:00 Summary of Presentations

4:15 Presentations

	PRESENTOR	PRESENTATION
Comp #1	Judy Alberts	behavior tracking
Comp #2	Nancy Peterson	DB Master database
Comp #3	Wendy Waggoner & Janet Gooey-Davis	report writing with AppleWorks
Non-comp	Hugh Ellis	tracking SpEd scheduling at Marshall

SCHEDULE OF FUTURE SI-SIG MEETINGS

February 18

March 18 ← Dates again

April 15

(All SI-SIG meetings are scheduled for C-121, 3:45 - 5pm)

Sample flyer

SOFTWARE PREVIEW

MEANWHILE, MEMBERS OF SI-SIG GATHER IN FRONT OF A VIDEO SCREEN (ie TV SET) TO VIEW THE LATEST IN SOFTWARE!
WOW! THIS NEW SUNBURST STUFF IS GREAT!
YEAH! AND WE CAN REVIEW SO EASILY IN THREE MINUTE VIDEO EXERPTS!
LET'S PLAY THE TOM SYNDERTAPE
I'VE HEARD ABOUT "THE OTHER SIDE" IT'S GREAT TO SEE IT AND MORE AT SI-SIG!

Name tags are helpful!

WEDNESDAY APRIL 15th
3:45-5:00 in C-121/CSC

Always serve food

SI-SIG
Special Instruction-Special Interest Group

Flyers should arrive ~ 5-7days in advance of event

Reinforcing Math Skills

While many teachers feel that drill and practice programs do not make optimal use of the computer, resource room teachers tend to rely on this type of program to reinforce basic skills. Becky Frazier from Scappoose, Oregon has been using the Mastering Math System from the Minnesota Educational Computing Consortium with her upper elementary resource room students. A key ingredient in her selection of this series is a management system which allows her to individualize each student's work for each day and which tracks each student's progress through the lessons.

Karen Shadley of Albany, Oregon also uses a microcomputer to provide drill and practice for her students. She uses the Milliken Math Sequences by the Milliken Publishing Company. Karen also likes the management system in this program.

Individualizing can mean many things, but it usually involves quite a bit of preparation on the teacher's part. Software with a management system relieves the teacher of some (but not all) of the tedium of creating separate worksheets for each student. The MECC programs do not teach the basic concepts of addition, subtraction, multiplication, and division, but rather they present practice problems in a game format.

Becky demonstrated some of the programs. The MECC series handles regrouping during subtraction and long division particularly well. The problems are presented clearly on the screen in the way the student has learned to set the problems up. The other teachers discussed similarities among math drill and practice programs and ageed that this series was attractive both in price and in teacher control.

The Milliken Program was especially strong in the management section and in the scope of skills which was covered.

What Works for You?
Using Computers in the Classroom

SUBMITTED BY

Name: Becky Frazier

School Address: Petersen Elementary, 52181 S.W. EM Watts Rd., Scappoose, OR 97056

Phone: 543-7111 **Best time to call:** After 2:10, before 3:30

TARGET AUDIENCE

Grade: 4-6 **Ability level:** 2-5

Comments: These students are in a resource room.

HARDWARE

Number: **Type:** Apple IIe **Peripherals:** 2 disc drives, printer

Arrangement:

SOFTWARE

Title(s): Mastering Math System **Publisher(s)** MECC

Number of copies: 1 each: Management System, Early Addition, Circus Math, Space Subtraction, Subtraction Puzzles, Mult. Puzzles, Quotient Quest

PROJECT DESCRIPTION

Title or brief description: Program to give practice in basic math processes.

Instructional Purpose: Review and practice of addition, subtraction, multiplication, and division.

Objectives: Students will practice facts and basic math processes as directed by computer.

DESCRIPTION OF THE LESSON

Pre-activities: Students are taught the skills they will do on the computer. Teacher programs management system.

Computer activities: Student uses both disc drives to have the computer tell him/her which program to use.

Follow-up activities: Seat work to check skill level.

MANAGEMENT

Total Time: 15 min. setup **Schedule:**

Things to watch out for: Be sure students understand where each disc is.

TEACHER PREPARATION

List of instructional materials:

Teacher "To Do" list:

What Works for You?
Using Computers in the Classroom

SUBMITTED BY

Name: Karen Shadley

School Address: Sunrise Elementary School, 730 19th Ave. S.E., Albany, OR 97321

Phone: 503/967-4608 **Best time to call:** 8:30-9:00; 3:30-4:00

TARGET AUDIENCE

Grade: K-5 **Ability level:** With placement test, students can be placed at their appropriate level.

Comments:

HARDWARE

Number: 1 **Type:** Apple IIe **Peripherals:** Monitor, disk drive

Arrangement:

SOFTWARE

Title(s): Number Readiness, Addition, Subtraction, Multiplication **Publisher(s)** Milliken Publishing Company

Number of copies: I will bring a copy of each disk

PROJECT DESCRIPTION

Title or brief description: Individualized approach to provide practice in basic math computation.

Instructional Purpose: Drill and practice on math computation skills.

Objectives: Teach and improve computation skills.

DESCRIPTION OF THE LESSON

Pre-activities: Optional: flashcard drill if basic facts are not well-known

Placement test

Computer activities: Lessons as assigned by teacher after placement test

Follow-up activities: Optional: paper and pencil problems to verify transfer of skills without the computer prompts

MANAGEMENT

Total Time: 15 min. daily **Schedule:** Variable

Things to watch out for: Students overly reliant on computer prompts.

TEACHER PREPARATION

List of instructional materials: Hardware, software, ("scratch" paper, and pencil: optional)

Teacher "To Do" list:

1. Program assignments for each student
2. Monitor progress
3. Give supplemental instruction when necessary

Database in Reading

Nancy Panitch teaches emotionally disabled students in a resource room of an elementary school. She liked the idea of using databases to teach the students some higher level skills, but needed to stick to the basic subjects which were giving her students problems. To combine the two goals, Nancy used the Secret Filer database program from Scholastic. While the data base is very limited, Nancy found it to be useful since it is very easy to learn. She reported that students can enter data almost immediately, although they sometimes lose information because they do not quit the program in the proper sequence (see the "Things to Watch Out For" section of the lesson plan.)

A drawback of the Secret Filer program was the limited amount of space for each entry. The students had to abbreviate often and to express the main point of the story in one phrase or sentence.

The students learned that some of the information had to be entered in exactly the right wording or it would not show up the right way in a search for records. Nancy did not see this as a drawback since she wanted her students to follow her directions exactly. If they made errors on entering information, those errors would show up in searching.

What Works for You?
Using Computers in the Classroom

SUBMITTED BY

Name: Nancy Panitch

School Address: Cooper Mountain School, P.O. Box 200, Beaverton, OR 97075

Phone: 503/649-0264 **Best time to call:** 2:00-4:00

TARGET AUDIENCE

Grade: 4-6 **Ability level:** 4-6 (some 3rd)

Comments: Used for S.E.D. students in a self-contained classroom. May be used in other settings.

HARDWARE

Number: 1 **Type:** Apple IIe **Peripherals:** Printer optional

Arrangement: Each student needs an individual disk that is initialized and set up during the student's initial session with the disk.

SOFTWARE

Title(s): Secret Filer **Publisher(s)** Scholastic

Number of copies: 1 plus backup copy

PROJECT DESCRIPTION

Title or brief description: Each student files information about each story she/he has read during her/his reading class.

Instructional Purpose: The student will review each story read by filing information in a computer file system.

Objectives:

Students will use computer file system.
Students will find title of story, author, most important characters.
Students will decide what type of story he/she read.
Student will make summarizing comment about story.
Student will demonstrate knowledge of use of computer menu.

DESCRIPTION OF THE LESSON

Pre-activities: Teach: 1. Where to find the title and author of each story. 2. How to determine the main characters in a story. 3. Classification of story by type (see attached list). Give many examples of summarizing comments about stories read aloud to class. Demonstrate how to file information in the computer using the Secret Filer program.

Computer activities: Individually go over the steps with each student for her/his first and possibly second story entered. Student then enters each story she/he had read during reading. (Students in my class are on individual reading contracts.) The last step in the contract is to enter information in the computer. Each student is reading a different story. Student may have to wait for a time to use the computer while beginning a new contract.

Follow-up activities: Possible followup activities:

1. At end of the year print each of the file cards that the student entered in the computer.
2. Print a copy of each card that the student entered at the time of entry and have each student illustrate each story filed.

MANAGEMENT

Total Time: 10-15 min./story per student

Schedule: Student go to computer individually during reading time after reading contract has been completed.

Things to watch out for: Student may have to wait until the next day to file her/his story. Students must understand that they have to use the Esc key after filing a story until the screen says "remove the disk." Titles, author names, names of characters and comments may have to be abbreviated to fit.

TEACHER PREPARATION

List of instructional materials: Laminated list of story types; laminated list of what to choose at each step in the menu; initialized disk for each student that must be set up with a story file at the time that the student will be entering data for the first story.

Teacher "To Do" list: Practice with disk before using with students. Teach students that they do not have to read all the words on the screen each time they enter data into the program. They only need to go through the menu steps, enter individual secret password and Esc back to menu before turning the computer off.

Some Type of Stories

Adventure
Animal
Autobiography
Biography
Community People
Detective
Fantasy
Family
Folk Tale - Fairy Tale
History
Holiday
Humorous (Funny)
Magic
Mystery
Myth
Other Lands
People
Science
Science Fiction
Sports
Vehicles

Main Menu

Secret Filer

SECRET Filer Menu

Look at or Change a file

Stories

Add cards

Modifying Computer Inputs

In working with students with severe physical disabilities, Jenny Workman relies on the Adaptive Firmware Card from Adaptive Peripherals. The card allows a student to interact with the computer using switches or membrane keyboards. The card interprets the switch inputs in the way that the teacher has set up for each program. In the demonstration, Jenny set the card to interpret a head switch to mean "yes" and a large pedal switch to mean "no." She then started a piece of software which called for those responses. The Adaptive Firmware Card translated the pressing of the switches to the programmed words and sent the words to a computer as though they had been typed from the keyboard.

The card will also scan an alphabet for a student who is high functioning but severely physically disabled. With scanning, the student waits until the letter he or she wants typed is highlighted then presses a switch. The card then passes that letter to the computer as though it came from the keyboard.

To demonstrate the card, Jenny used some homemade switches which she had put together using plastic cassette tape boxes. She glued a switch inside the box so that when the box closed the switch would close. She uses these switches with many of her students at a cost far below that of commercial adaptive switches.

Jenny uses the card with students who have never had much control over their surroundings. The simple choice of changing a graphic display on the computer has been meaningful to her students who have always been essentially powerless. She uses programs which have a lot of visual appeal for students who are too disabled to interact with instructional programs.

What Works for You?
Using Computers in the Classroom

SUBMITTED BY

Name: Jenny Workman

School Address: 425 S.E. Columbus, Albany, OR 97321

Phone: 503/967-4617 **Best time to call:** 8:30-4:00

TARGET AUDIENCE

Grade: Intermediate **Ability level:** Ages 8-11 yrs. Severe to moderate. developmental delay

Comments: Classroom includes a wide range of abilities.

HARDWARE

Number: 1 **Type:** Apple IIe **Peripherals:** Adaptive Firmware Card

Arrangement:

SOFTWARE

Title(s): Motor Training; Magic Slate; Sticky Bears; Fire Organ **Publisher(s)** Public domain; Sunburst; Weekly Reader

Number of copies: 1 of each

PROJECT DESCRIPTION

Title or brief description: The primary goal is to provide computer experience for all of my students by making it accessible through a variety of input methods and appropriate software selection.

Instructional Purpose:

Drill and practice (Math); Language and Spelling; Active Stimulation Program (ASP); Switch Training; and Vision Stimulation

Objectives: Given a computer and appropriate input methods and software students will use the computer for: drill and practice (math); language and spelling; active stimulation program (ASP); switch training; and vision stimulation.

DESCRIPTION OF THE LESSON

Pre-activities: Computer experience follows instructional programs in math and spelling.
The students are scheduled for 15-20 min. each day. Each program is designed to meet a specific goal. Pre-activities are included only in academic areas, i.e., math, spelling.

Computer activities:

1. Motor Training--Designed to assist student in mastering the use of a switch.
2. Magic Slate--A childrens' word processor, 20, 40 and 80 column lettering provides for visually impaired. Used for language and spelling.
3. Fire Organ--A graphics program for use with ASP and vision stimulation specifically.

Follow-up activities:

4. Sticky Bear Math--Drill and practice in simple addition facts.
5. Sticky Bear Reading--I use as a language program. It is a high graphic program that encourages identification of nouns, prepositions and verbs.

MANAGEMENT

Total Time: 3 hours **Schedule:** 15-20 min. per student

Things to watch out for:

Set-up time for adapted programs.

TEACHER PREPARATION

List of instructional materials:

1. Create and store adaptive programs
2. Appropriate switches
3. Required positioning
4. Appropriate software

Teacher "To Do" list:

Northwest Regional Educational Laboratory

Dr. Robert R. Rath, Executive Director
Dr. Ethel Simon-McWilliams, Associate Director

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- Developing and disseminating effective educational products and procedures
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- Providing technical assistance in educational problem solving
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